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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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August 16, 1999

Mr. Emil Klawitter
Code 1823 EK
Department of the Navy, Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop 82
Lester, PA 19113-2090

Re: Quarterly Progress Reports Oct-Dec 1998 &Jan-Mar 1999
Soil Vapor Extraction/Aquifer Air Sparging Remedial System Operations
Navy Exchange Service Station (Building 538), Naval Air Station, Brunswick, Maine"

Dear Mr. Klawitter:

The Department of Environmental Protection (MEDEP or Department) has reviewed the Quarterly Progress Reports for October-December 1998 and January-March 1999 on the Soil Vapor Extraction/Aquifer Air Sparging Remedial System for the Navy Exchange Service Station prepared by EA Engineering, Science and Technology. Based on that review the Department has the following comments and issues.

Because the System Operations Reports for the 4th Quarter of 1998 and the 1st Quarter of 1999 were forwarded at nearly the same time, both reports were reviewed together and the comments are combined in this letter. The reports are very similar and most comments apply to both reports.

The Department appreciates the remedial and monitoring improvements to the Navy's program at the NEX that have been incorporated. The expansion of the remedial system in October 1998 with the installation of three new aquifer air sparging wells and three new soil vapor extraction trenches should improve the effectiveness of the system.

General Comments

1. The Navy's responses to MEDEP's comments on the July – September 1998 Quarterly report are appropriate and appreciated. As the reviews/responses now lag one report behind, the next report or the one thereafter will need to include the Navy's responses for two quarters. The Department will try to be prompt in its future reviews to facilitate becoming current with responses to comments. No response required.

2. The Department is pleased that the Navy installed a new monitoring well (MW-NASB-226) soon after our joint review of the remedial monitoring system during the September 1998 meeting. It was noted in the field records in Attachment E of the October – December Quarterly report that petroleum odor emanated from the well during drilling and well development. No response required.

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3. On Figure 2, the Department notes that the "unusually high total volatile hydrocarbon recovery intervals" consists of seven one-day periods since SVE system startup in 1993. TVH removal quantities were back in the normal long-term range the next measurement (approximately 2 weeks later) after the system adjustment resulting in the high-recovery days. These "spikes" are significant in the cumulative total pounds of TVH recovered. If more spikes could be created, it would appear that the cleanup goals might be reached more rapidly. The Navy should give thought to frequent on-and-off operation of various components of the system to simulate high-recovery removal periods.

4. Table 1 of the January – March 1999 report shows some large fluctuations in daily total volatile hydrocarbon removal rate, whereas the fluctuations for the October – December 1998 period are more consistent, but lower. Much of the differences seem to relate to the startup and proveout of the expanded SVE/AAS system during the first two weeks of January 1999. These data provide backup for the question that is posed in Comment 3. DEP assumes that the system settings that gave the highest rates during the first part of January were used for the long-term operation thereafter. Please comment.

5. Two rounds of sampling to date at the new well MW-NASB-226 has shown DRO and GRO concentrations from 5,000 to 50,000 µg/L, which represent the highest values recorded for the NEX monitoring wells for these two quarters. The Department believes that the level of contamination at the MW-NASB-226 location exemplifies the need for more frequent monitoring further downgradient. Two downgradient wells (MW-NASB-009 and MW-NASB-010) are presently sampled annually. This schedule is not adequate. MW-NASB-009, MW-NASB-010, and MW-NASB-204 should be sampled quarterly concurrent with the upgradient wells. If necessary, this should be discussed at the next technical meeting.

Specific Comments

6. Soil Vapor Extraction System performance, page 2, both reports:

   "For calculation of the daily total volatile hydrocarbon removal rate, it was assumed that the daily flow rate remained constant in individual SVE influent lines."

   Please explain this assumption in greater detail with the objective of justifying the assumption to the non-engineer.

7. Well Gauging and Water Quality Indicator Parameter Measurements, page 3, 1st para, both reports:

   "Gauging of monitoring wells and air sparging wells confirmed the absence of measurable (i.e., <0.01 ft) light, non-aqueous phase liquid (LNAPL) in site wells during the period."

   Please confirm and change the direction of the "less-than-sign". This statement may not be true as the historically most contaminated well, MW-NASB-026, was frozen during this period and was not gauged or sampled. What about new well MW-NASB-226? The field notes in Attachment C do not mention a presence or absence of LNAPL, and MW-NASB-226 appears to have the second highest groundwater concentrations. Please reconcile the above statement with the statement at the bottom of page 3 that reads: "Well gauging confirmed the absence of LNAPL at the 4 monitoring well locations."

8. Figure 3 – both reports:

   The water table contours shown on these figures are not positioned such that each well measurement is given equal weight in interpretation; and therefore the true contours are likely shaped and positioned differently in some places. In particular, on the January – March 1999 map, the 58 foot contour should have been drawn through a point about 10 south of the storm water catch basin (CB). Overall, the direction of groundwater flow appears correct. However, MW-NASB-225 is given full weight, a

continuous groundwater flow line projected downgradient from MW-NASB-026 would run very close to MW-NASB-225, past MW-NASB-009 approximately 50 feet to the west, and very close to NASB-204. The first three wells have the high GRO, DRO, benzene, and MTBE concentrations that likely defines a plume pathway. MW-NASB 204 was to be sampled during the June 1999 event, according to the Navy's response to DEP's Comment 2 for the July – September 1998 period. Was this done?

9. Table 4 – Sparge Well AAS-2:

The values for the field parameters on Jan 19, 1999 are radically different than recorded for the other dates. A temperature decrease of over 8 °C between the Jan 4 and Feb 2 readings needs explaining, as does a dissolved oxygen value of 14.61 mg/L as compared to 6.98 before and 7.48 after. Please review these data, and flag or delete them in subsequent tables of historical data.

Thank you for the opportunity to review this report. If you have any questions or comments please call me at (207) 287-7713.

Respectfully,

Claudia Sait
Project Manager-Federal Facilities
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